



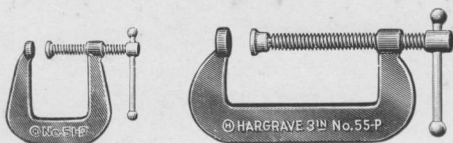
CATALOG No. 110

ESTABLISHED 1879  
INCORPORATED 1884

CINCINNATI, OHIO, U S A.

## SUPER-JUNIOR CLAMPS

FORGED STEEL, HEAT-TREATED FRAMES



300% Stronger Than Malleable Clamps

## SEVEN SIZES—1" TO 3" OPENINGS

DEPTHS  $\frac{3}{4}$  in. to  $2\frac{1}{2}$  in.

Suitable for Jig and Pattern Work, Welding, Gluing and Aircraft construction. Will last many times longer than malleable clamps.

Stock	Opening	Depth	Lbs., Doz.
No. 50-P	1 in.	$\frac{3}{4}$ in.	1
No. 51-P	1 in.	$1\frac{1}{2}$ in.	$2\frac{1}{4}$
No. 52-P	$1\frac{1}{4}$ in.	$1\frac{1}{4}$ in.	$2\frac{1}{2}$
No. 53-P	$1\frac{1}{2}$ in.	$1\frac{1}{2}$ in.	$3\frac{1}{2}$
No. 54-P	2 in.	$1\frac{1}{4}$ in.	4
No. 55-P	3 in.	$1\frac{3}{8}$ in.	$6\frac{1}{2}$
No. 56-P	$2\frac{1}{2}$ in.	$2\frac{1}{2}$ in.	8

Shipment from factory in packages only—50-P, 51-P, 52-P, 53-P, 1 doz. per box. 54-P, 55-P, 56-P,  $\frac{1}{2}$  doz. per box.



## SMALL "C" CLAMPS

Strong Malleable Frames and Steel Screws

Used extensively in Aircraft and many other industrial plants. With flat Wing and Riveted Button Tip. Natural Finish.

Nos. 566-568

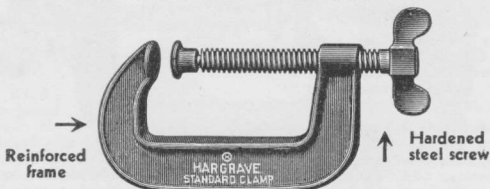
Stock	Opening	Depth	Lbs., Doz.
No. 566	$1\frac{1}{4}$ in.	$1\frac{1}{4}$ in.	$2\frac{1}{2}$
No. 568	$2\frac{1}{2}$ in.	$2\frac{1}{2}$ in.	$9\frac{1}{4}$

Packed in bulk

**STANDARD CARRIAGE CLAMP No. 540**

(Reg. U. S. Pat. Off.)

EACH CLAMP IS MACHINE TESTED



**FRAME**—Special analysis of malleable iron, shaped to give greatest strength for the weight.

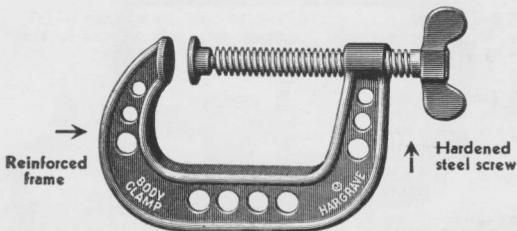
**SCREW**—Steel, heat-treated to prevent bending or breaking, and battering of threads. "Acme" thread insures long life and permits rapid adjustment.

Furnished with oscillating (ball and socket) tip.

Opening	Depth	Lbs., Doz.	Opening	Depth	Lbs., Doz.
3 in.	1 $\frac{7}{8}$ in.	12	8 in.	3 $\frac{1}{4}$ in.	53
4 in.	2 $\frac{1}{8}$ in.	21 $\frac{3}{4}$	10 in.	3 $\frac{5}{8}$ in.	76 $\frac{1}{2}$
5 in.	2 $\frac{1}{2}$ in.	26 $\frac{1}{2}$	12 in.	3 $\frac{5}{8}$ in.	95
6 in.	2 $\frac{3}{4}$ in.	31 $\frac{1}{4}$	(For comparative strength, see page 9.)		

**BODY CLAMP No. 603**

EACH CLAMP IS MACHINE TESTED



Deeper and stronger than the Standard Carriage Clamp. Designed especially for automobile body trade and work requiring longer than ordinary reach. Ball and socket tip.

Opening	Depth	Lbs., Doz.	Opening	Depth	Lbs., Doz.
3 in.	2 $\frac{1}{4}$ in.	18 $\frac{1}{8}$	8 in.	3 $\frac{3}{4}$ in.	62
4 in.	2 $\frac{1}{2}$ in.	28	10 in.	4 in.	83
5 in.	3 in.	33	12 in.	4 $\frac{1}{4}$ in.	101 $\frac{1}{2}$
6 in.	3 $\frac{1}{8}$ in.	41	(For comparative strength, see page 9.)		

**SUPERCLAMPS—Forged Steel (Patented)****No. 44—REGULAR SERVICE**

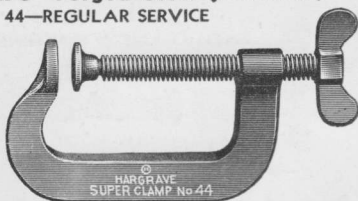
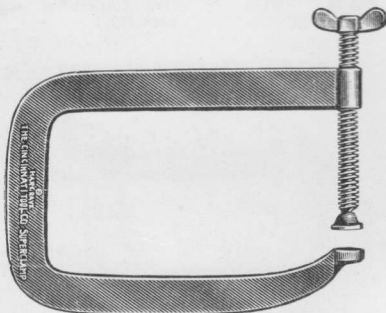
The No. 44 SUPERCLAMP is approximately the same weight as the Standard Carriage Clamp, but has more resistance to both tensile and transverse strains.

**FRAME**—High carbon steel, heat-treated, formed by our own process, which permits the use of a much stiffer grade of steel than other methods of forging. Will stand overloads without permanent distortion.

**SCREW**—Steel, heat-treated; large diameter; powerful "Acme" thread. Oscillating (ball and socket) tip. Full length.

Opening, in..	2	3	4	6	8	10	12
Depth, in....	1 3/4	2 1/4	2 1/2	2 3/4	3 1/2	3 1/2	3 1/2
Test Load, lbs.	2200	2400	3000	3700	4500	5400	7200
Approx. Wt., lbs. dozen..	12	19	27	41	65	92	106

(For comparative strength, see page 9.)

**No. 44X—DEEP REACH**

The Steel SUPERCLAMP can be furnished in any reasonable combination of opening and depth, permitting the user to have a rigid steel clamp exactly suited to his individual requirements.

The following list gives dimensions on stock sizes. Write us about special sizes.

Size, in.....	6 x 8	8 x 12	12 x 16
Opening, in.....	6	8	12
Depth, in.....	8	12	16
Approx. Wt., lbs., each.....	7	13	19
Size of Steel, in.....	1/2 x 1 1/2	1/2 x 2	1/2 x 2
Diameter of Screw, in.....	5/8	3/4	7/8

**No. 42—MEDIUM SERVICE****No. 42**

**FRAME** is forged from an extremely stiff steel and heat-treated.

**SCREW** is hardened steel with N. S. C. thread and Sliding Pin (Vise Type) Handle.



Maximum opening, in.....	4	6	8	10
Minimum opening, in.....	$\frac{5}{8}$	$2\frac{5}{8}$	$4\frac{1}{8}$	$6\frac{1}{8}$
Depth of Throat, in.....	$2\frac{1}{2}$	$2\frac{3}{4}$	$2\frac{3}{4}$	3
Diameter of Screw, in.....	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$
Weight, each, lbs.....	$4\frac{1}{2}$	$5\frac{1}{2}$	$6\frac{1}{4}$	$8\frac{1}{2}$
Test Load, lbs.....	8,000	9,000	10,000	11,000

Maximum opening, in.....	12	15	18
Minimum opening, in.....	$8\frac{1}{8}$	10	13
Depth of Throat, in.....	3	$3\frac{1}{4}$	$3\frac{1}{4}$
Diameter of Screw, in.....	$\frac{7}{8}$	$\frac{7}{8}$	$\frac{7}{8}$
Weight, each, lb.....	9	$13\frac{1}{2}$	15
Test Load, lbs.....	12,000	13,000	14,000

**No. 43—WELDER'S CLAMP**

WITH ANTI-SPATTER SCREW

(Patented)

The HARGRAVE No. 43 WELDER'S CLAMP has a SCREW made of an alloy that resists loading. What few particles of spatter stick to the threads are easily cleaned off.



(Patented)

**FRAME** is Forged Steel, Heat-treated (not malleable iron or cast steel). Note test loads listed below.

No tube over screw to bind or buckle.

Ball and Socket Tip on end of screw, lines up on work that is not square.

Maximum opening, in....	4	6	8	10	12
Minimum opening, in....	0	0	2	3	5
Depth of Throat, in.....	$2\frac{1}{2}$	$2\frac{3}{4}$	$2\frac{3}{4}$	3	3
Diameter of Screw, in....	$\frac{7}{8}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{8}$
Weight, each, lbs.....	$4\frac{3}{4}$	$6\frac{1}{2}$	$7\frac{1}{8}$	$10\frac{1}{8}$	11
Test Load, lbs.....	8,000	9,000	10,000	11,000	12,000

(For comparative strength, see page 9.)

**SUPERCLAMPS—Forged Steel (Patented)****No. 40—HEAVY SERVICE**

**FRAME** is forged from an extremely stiff steel and heat-treated.

**SCREW** is hardened steel with N. S. C. thread and Square Head



Maximum opening, in...	$\frac{3}{4}$	$1\frac{1}{4}$	$1\frac{3}{4}$	$2\frac{1}{4}$
Minimum opening, in...	0	0	$\frac{3}{4}$	$\frac{7}{8}$
Depth of Throat, in.....	$1\frac{1}{8}$	$1\frac{1}{8}$	$1\frac{1}{8}$	$1\frac{7}{8}$
Diameter of Screw, in....	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$
Weight, each, lbs.....	$\frac{1}{8}$	$\frac{3}{4}$	$1\frac{5}{8}$	$3\frac{1}{2}$
Test Load, lbs.....	2,000	4,500	7,000	10,000

Maximum opening, in...	$3\frac{1}{4}$	$4\frac{1}{2}$	$5\frac{1}{2}$	$6\frac{1}{2}$
Minimum opening, in...	$1\frac{3}{8}$	2	$2\frac{1}{2}$	$3\frac{1}{8}$
Depth of Throat, in.....	$2\frac{3}{4}$	$2\frac{3}{4}$	$3\frac{1}{4}$	$3\frac{1}{4}$
Diameter of Screw, in....	$\frac{7}{8}$	$\frac{7}{8}$	$\frac{7}{8}$	1
Weight, each, lbs.....	$6\frac{1}{4}$	$9\frac{1}{2}$	$12\frac{1}{8}$	$15\frac{1}{8}$
Test Load, lbs.....	13,000	16,000	19,000	22,000

(For comparative strength, see page 9.)

## DEEP CLAMPS

## No. 573

A medium weight clamp, similar to the standard Carriage Clamp, but with a deeper reach. Malleable frame,  $\frac{5}{8}$ -inch steel screw, heat-treated, with oscillating (ball and socket) tip.



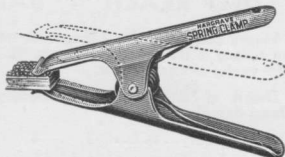
## POWER TESTED

Opening, inches.....	3½	4½	6½
Depth, inches.....	4½	4½	4½
Weight, dozen, lbs.....	27¾	32¼	37¼

Packed in bulk.

## IMPROVED SPRING CLAMP

Can be applied or removed instantly. Surface of work is tangent to curve of jaw at any opening. Holds firmly without marring the work.



Stock	Opening	Length	Weight, Doz.
No. 1	1 in.	4 in.	1 lb. 9 oz.
No. 2	2 in.	6 in.	4 lbs. 5 oz.
No. 3	3 in.	9 in.	8 lbs. 8 oz.

## IMPROVED "I" BAR CLAMP No. 640 (Patented)



No Ruined Joints from Slipping

Designed and constructed for the hard every-day grind of production. Its exclusive features of superiority make it the choice of the world's largest users.

**BAR**—Shaped to stand the greatest strain for the weight. Wide smooth flange will not mar the work.

**NOTCHES**—Formed in web, leaving the bar full strength as no metal is removed. Spaced  $\frac{1}{2}$  in. apart.

**SLIDE**—Cannot slip or bind. Always easily released. Heavy-tempered steel dog engages the notches making a positive stop and insuring years of service without repairs. Clamping surface,  $2 \times 1\frac{3}{8}$  in.

**TIP**—Has case-hardened thrust bearing for end of screw, practically eliminating wear.

**SCREW**—Steel, heat-treated, with deep-cut "Acme" thread and long bearing, insuring long life.

**SPECIFICATIONS**—Bar is high-carbon manganese steel,  $1\frac{1}{2} \times \frac{5}{8} \times \frac{1}{8}$  in. Slide, Tip, Frame and Crank are best grade of malleable. Screw is  $\frac{5}{8}$  in. diameter. Improved Wood Grip is protected from breakage by steel cap and ferrule. All-metal handle optional.

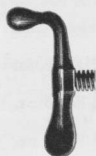
Opening, feet.....	2	2½	3	4	5	6	7
Weight, each, lbs.....	6¾	7½	8	9¼	10½	11¾	13

## DEEP REACH "I" BAR CLAMP No. 650

Heavy pattern "I" Bar Clamp with steel bar  $2\frac{1}{8} \times \frac{1}{8} \times \frac{1}{8}$  in., clamping surface 3 in. wide, 4 in. high,  $\frac{3}{4}$  in. diameter, steel screw. 2 in. from center of screw to bar.

Details of construction are essentially the same as those of No. 640 Clamp described above.

Opening, feet.....	3	4	5	6	7	8	10
Weight, each, lbs.....	15½	17½	19½	21½	23½	25½	27½



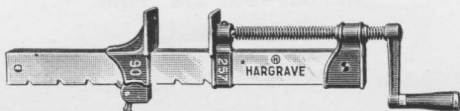
## ALL METAL "T" HANDLE

This all-metal crank handle can be supplied on all clamps having either  $\frac{5}{8}$  in. or  $\frac{1}{2}$  in. diameter screws.



**PERFECTION Nos. 440—450**

(Trade Name Registered)



These Clamps are made in two patterns—regular and heavy. The regular pattern has clamping surfaces of jaws 2 in. deep,  $1\frac{1}{8}$  in. wide,  $\frac{5}{8}$  in. screw. The clamping surfaces of the heavy pattern are  $2\frac{1}{4} \times 2\frac{1}{4}$  in.,  $\frac{3}{4}$  in. screw.

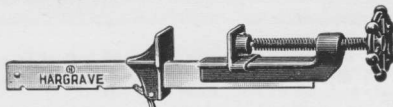
The bar is high carbon manganese spring steel giving great strength. Crank, frame, tip and slide are of the best grade of malleable iron. Dog for slide is tempered steel.

No. 440—Regular Pattern—With Bar  $1\frac{1}{2} \times \frac{1}{4}$  in.

Openings, ft. ....	2	$2\frac{1}{2}$	3	4	5	6
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No. 450—Heavy Pattern—With Bar  $1\frac{3}{4} \times \frac{3}{8}$  in.

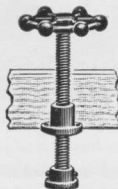
Openings, ft. ....	3	4	5	6	8	10
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**JOINERS' CLAMP No. 458**

Our Joiners' Clamp is intended for narrow gluing and clamping where speed and rapidity of handling are more necessary than power. High Carbon Manganese Steel Bar  $1\frac{1}{8} \times \frac{1}{8}$  in.

No. 458—Joiners' Clamp—With Bar  $1\frac{1}{8} \times \frac{3}{16}$  in.

Openings, ft. ....	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$
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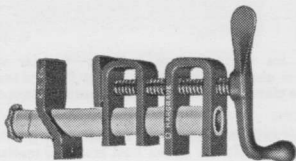
**PRESS SCREWS****No. 36-T****No. 36-W**

STEEL SCREW,  $\frac{5}{8}$ -in. diameter, with 6-in. travel, "USS" thread. TIP,  $1\frac{1}{4}$  in. diameter. Threaded nut drives into 1 in. hole and is held firmly by two screws.

## CLAMP FIXTURES

### No. 605—Fits 3/4" Pipe

(Improved Steel)



All parts are steel, except crank which is malleable.

Easy to assemble. Can be applied to any odd length of pipe. We recommend black iron pipe, extra heavy for ordinary clamping, and double extra heavy where greater pressure is required.

Slide is steel, heat treated. It will not slip under pressure and will not stick when pressure is released.

Screw is  $\frac{5}{8}$ " in diameter, clamping surface of both slide and tip is  $1\frac{3}{4}$ " wide,  $1\frac{7}{8}$ " high. Double bearing of frame and tip prevents bending of the screw.

### No. 622 Clamp Fixture—Fits 1/2" Pipe

(Similar to No. 605)

### No. 615—Fits 1-1/8" x 2-1/4" Wood Bar

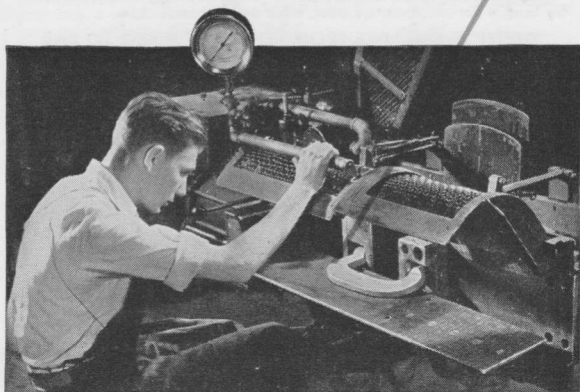


Quickly and easily applied to wood bar, any length. Malleable iron parts, steel screw,  $\frac{1}{2}$  in. diameter, heat-treated. Clamping surfaces  $1\frac{1}{2}$  in. wide,  $1\frac{7}{8}$  in. high.

No. 615—(Wheel Handle).

No. 615-18 1/2—("T" Handle).

# Individually Tested



Hydraulic Clamp Tester, which quickly and accurately applies loads to 30,000 lbs. (15 tons). Each HARGRAVE Standard Clamp, Body Clamp, and Superclamp is tested to more than its rated load. HARGRAVE Steel Bar Clamps are frequently tested to insure their efficiency.

This Tester is also useful in experimental work and in making comparative tests.

Space does not permit us to give the TEST LOAD which is applied to all sizes of each pattern. However, to enable you to judge which is best suited for any particular operation, we give number of pounds applied in production test of one popular size of each as follows:

No. 540—6-in. Standard Carriage Clamp .....	2300 lbs.
No. 603—6-in. Body Clamp .....	2500 lbs.
No. 44—6-in. Forged Steel Superclamp .....	3700 lbs.
No. 42—6-in. Forged Steel Superclamp .....	9000 lbs.
No. 40—6½-in. Forged Steel Superclamp .....	22000 lbs.

Load applied to other sizes is in proportion to size and weight of the Clamp. TEST LOAD for each Clamp is merely the number of pounds strain to which it has been tested, to discover any defect. Each Clamp will actually stand more.

See CHISEL TEST on page 17.

## QUICK CLAMPS (Patented)

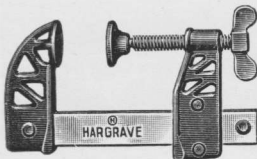
Especially useful in pattern making, boat and ship building, automobile body, airplane and parlor frame work.

The patented Clutch will not slip or bind. Always easily released by hand. Bar and screw are steel, other parts are malleable.

"DEPTH" IS DISTANCE FROM CENTER OF SCREW TO BAR

**Nos. 498—500—514 Patterns** (Movable Frame, Stationary Foot)

**Nos. 499—501—503 Patterns** (Stationary Frame, Movable Foot)



**No. 498**

Bar, 1 x  $\frac{5}{16}$  in. Depth, 2 in.

Opening, Inches	Approx. Wt., Doz.
6	28½ lbs.
8	30¾ lbs.
12	35¼ lbs.
18	42 lbs.
24	48¾ lbs.
30	55¼ lbs.



**No. 499**

Bar, 1 x  $\frac{5}{16}$  in. Depth, 2 in.

Opening, Inches	Approx. Wt., Doz.
12	35¼ lbs.
18	42 lbs.
24	48¾ lbs.
30	55¼ lbs.

**No. 500**

Bar, 1½ x ¼ in. Depth, 2½ in.

Opening, Inches	Approx. Wt., Doz.
12	51¾ lbs.
18	60 lbs.
24	68¼ lbs.
30	76½ lbs.
36	84¾ lbs.

**No. 501**

Bar, 1½ x ¼ in. Depth, 2½ in.

Opening, Inches	Approx. Wt. Doz.
12	51¾ lbs.
18	60 lbs.
24	68¼ lbs.
30	76½ lbs.
36	84¾ lbs.

**No. 514**

Especially Designed for  
Heavy Work

Bar, 1¾ x ¾ in. Depth, 3 in.

Opening, Inches	Approx. Wt., Doz.
6	78½ lbs.
8	83 lbs.
12	92 lbs.
18	105½ lbs.
24	119 lbs.
36	146 lbs.
48	173 lbs.
60	200 lbs.

**No. 503**

Bar, 1¾ x ¾ in. Depth, 4½ in.

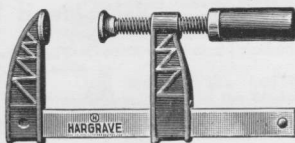
Opening, Inches	Approx. Wt., Doz.
6	70½ lbs.
8	75 lbs.
12	84 lbs.
18	97½ lbs.
24	111 lbs.
36	138 lbs.
48	165 lbs.

## QUICK CLAMPS (Patented)

Hargrave Quick Clamps can be instantly applied or removed from the work, take up less room and save a great amount of time over ordinary clamps.

**No. 494—Light Weight**  
**No. 506—Med. Weight**

(Movable Frame, Stationary Foot, Wood Handle on Screw)



### No. 494 (Light)

Bar,  $\frac{1}{4}$  x  $\frac{5}{8}$  in. Depth, 2 in.

Opening, Inches	Approx. Wt., Doz.
12	11 lbs.
18	13½ lbs.
24	16⅞ lbs.

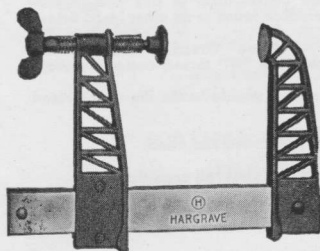
### No. 506 (Medium)

Bar, 1 x  $\frac{1}{8}$  in. Depth, 3½ in.

Opening, Inches	Approx. Wt., Doz.
12	40¾ lbs.
18	46½ lbs.
24	52¼ lbs.
30	58 lbs.

## Nos. 512-502-508-510 Patterns

(Movable Frame, Stationary Foot, Wing on Screw)



### No. 502

Bar, 1¾ x ¾ in. Depth, 4½ in.

Opening, Inches	Approx. Wt., Doz.
6	70½ lbs.
8	75 lbs.
12	84 lbs.
18	97½ lbs.
24	111 lbs.
36	138 lbs.
48	165 lbs.
60	192 lbs.

### No. 512

Bar, 1½ x ¼ in. Depth, 4 in.

Opening, Inches	Approx. Wt., Doz.
6	47¼ lbs.
8	50 lbs.
12	55½ lbs.
18	63¾ lbs.
24	72 lbs.

### No. 508

Bar, 1¾ x ¾ in. Depth, 6 in.

Opening, Inches	Approx. Wt., Doz.
6	90 lbs.
8	95 lbs.
12	105 lbs.
18	119 lbs.
24	133 lbs.
36	147 lbs.

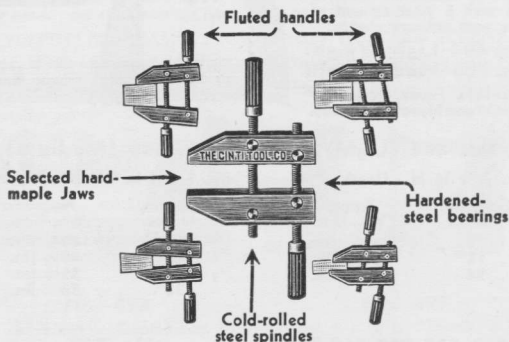
### No. 510

Bar, 2 x ½ in. Depth, 9 in.

Opening, Inches	Approx. Wt., Doz.
6	180 lbs.
8	187 lbs.
12	201 lbs.
18	222 lbs.
24	243 lbs.

## STEEL SPINDLE HAND SCREWS

Each Jaw is TESTED



**Strong—Durable—Satisfactory**

**HARGRAVE** Hand Screws are conventional in size and proportions, but have refinements of construction found in no other Hand Screw.

**SPINDLES**—Cold-drawn steel. "Acme" thread is longer wearing and has less frictional resistance than the "V" thread commonly used.

**BEARINGS**—Hardened steel, adding greatly to the life of the Hand Screw.

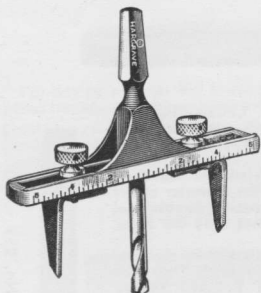
**JAWS**—Selected maple, properly seasoned and oiled.

**HANDLES**—Fluted, giving good grip under all conditions.

Packed as follows: Four smaller sizes (6, 8, 10 and 12 in.), one-half dozen in a carton; three larger sizes (14, 16 and 18 in.), one-third dozen in a carton.

Adjustable Pattern	Length of Jaws	Opening	Weight, Doz.
No. 706	6 in.	3 in.	14 lbs.
No. 708	8 in.	4½ in.	28 lbs.
No. 710	10 in.	6 in.	36 lbs.
No. 712	12 in.	8½ in.	58 lbs.
No. 714	14 in.	10 in.	72 lbs.
No. 716	16 in.	12 in.	96 lbs.
No. 718	18 in.	14 in.	108 lbs.

Non-adjustable pattern (opening and closing the jaws parallel) can be furnished when desired.

**CIRCLE METAL CUTTER No. 1406**

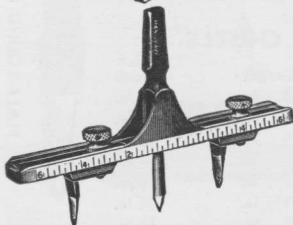
For cutting circular holes in sheet metal, wood or fiber. Useful for electricians, auto mechanics, sheet metal workers, etc.

The body of the tool is malleable iron, and the blades of best tool steel, ground and tempered for cutting metal.

Capacity for cutting circles from  $1\frac{1}{4}$  in. to 6 in. in diameter to  $\frac{3}{8}$  in. deep.

No. 1406 has center drill to bore hole.

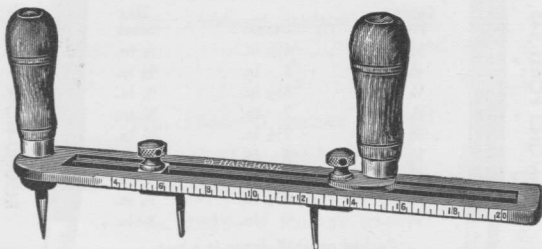
Also furnished with  $\frac{1}{2}$  in. Round Shank or No. 1 Morse Taper Shank, and High Speed Steel Knives.

**WASHER CUTTER (Brace) No. 407**

Capacity,  $\frac{7}{8}$  in. to 6 in. Used for cutting gaskets from sheet lead, thin wood, leather, paper or rubber, cutting both inner and outer circle at the same time. Used with any ordinary brace.

For Knives only specify No. 407-A

For Screws only specify No. 410

**WASHER CUTTER—20 in. (Hand) No. 411**

This tool is adapted to cutting gaskets from 4 to 20 inches in diameter.

For Knives only specify No. 411-A

For Screws only specify No. 410

## COLD CHISELS No. 200



All HARGRAVE Chisels, Punches, Star Drills, Stone Points, etc., are Hand Forged from Special Analysis Alloy Steel.

The width of the blade of our Cold Chisels is the same as the diameter of the stock, which gives a massive durable tool and one which does not sting the hand.

Regular length Chisels and all styles of Punches are finished with Bright Dark Blue Lacquered Body and Polished Blades.

## COLD CHISELS

Width Blade	Length	Size Stock
$\frac{1}{4}$ in.	5 in.	$\frac{1}{4}$ in.
$\frac{5}{16}$ in.	5 in.	$\frac{5}{16}$ in.
$\frac{3}{8}$ in.	5 in.	$\frac{3}{8}$ in.
$\frac{1}{2}$ in.	6 in.	$\frac{1}{2}$ in.
$\frac{5}{8}$ in.	$6\frac{1}{2}$ in.	$\frac{5}{8}$ in.
$\frac{3}{4}$ in.	$7\frac{1}{2}$ in.	$\frac{3}{4}$ in.
$\frac{7}{8}$ in.	8 in.	$\frac{7}{8}$ in.
1 in.	$8\frac{1}{2}$ in.	1 in.



CAPE No. 223



HALF-ROUND No. 233

## Cape, Half-Round, Diamond Point and Round-Nose Chisels

Cutting Edge	Length	Size Stock
$\frac{1}{8}$ in.	$4\frac{1}{2}$ in.	$\frac{1}{8}$ in.
$\frac{1}{16}$ in.	5 in.	$\frac{3}{8}$ in.
$\frac{1}{4}$ in.	$6\frac{1}{2}$ in.	$\frac{1}{2}$ in.
$\frac{5}{16}$ in.	7 in.	$\frac{5}{8}$ in.
$\frac{3}{8}$ in.	$7\frac{1}{2}$ in.	$\frac{5}{8}$ in.
$\frac{1}{2}$ in.	8 in.	$\frac{3}{4}$ in.
$\frac{5}{8}$ in.	8 in.	$\frac{3}{4}$ in.
$\frac{3}{4}$ in.	$8\frac{1}{2}$ in.	$\frac{7}{8}$ in.
$\frac{7}{8}$ in.	9 in.	1 in.



DIAMOND POINT 243



ROUND-NOSE No. 253

Packed one-half dozen in a box.

Ask about our TRIPLE TEST for each individual Chisel, Punch and Star Drill.

See page 17.



**DRIFT PUNCHES No. 630**

For driving out pins and bushings and lining up bolt and rivet holes.  
Hand forged. Point hardened and tempered.

Point.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{5}{8}$	$\frac{3}{4}$
Steel.....	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{3}{4}$
Length.....	10	10	10	10
Taper.....	$5\frac{1}{4}$	$4\frac{3}{4}$	$4\frac{3}{4}$	5

**LINING-UP PUNCHES No. 620**

Point.....	$\frac{5}{32}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{5}{8}$	$\frac{1}{4}$
Steel.....	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{3}{4}$
Length.....	10	12	12	12	18
Taper.....	$6\frac{1}{2}$	$8\frac{1}{2}$	$8\frac{1}{2}$	$8\frac{1}{2}$	$9\frac{1}{2}$

**SOLID PUNCHES No. 263**

Point.....	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{5}{32}$	$\frac{3}{8}$	$\frac{1}{4}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{1}{2}$
Steel.....	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{5}{8}$
Length.....	4	$4\frac{1}{2}$	5	$5\frac{1}{2}$	6	$6\frac{1}{2}$	7	8

**PIN PUNCHES****No. 2864—4 inches overall**

Point.....	$\frac{1}{16}$	$\frac{3}{32}$	$\frac{1}{8}$	$\frac{5}{32}$	$\frac{3}{8}$
Steel.....	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$
Pin Length.....	$\frac{1}{2}$	$\frac{11}{16}$	$\frac{3}{4}$	$\frac{13}{16}$	$\frac{15}{16}$

**No. 2866—6 inches overall**

Point.....	$\frac{3}{32}$	$\frac{1}{8}$	$\frac{5}{32}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{4}$
Steel.....	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$
Pin Length.....	$1\frac{1}{8}$	$1\frac{1}{8}$	$1\frac{1}{8}$	$1\frac{1}{8}$	$1\frac{1}{8}$	$1\frac{1}{8}$

**No. 2869—9 inches overall**

Point.....	$\frac{1}{8}$	$\frac{3}{8}$	$\frac{1}{4}$	$\frac{5}{8}$	$\frac{3}{4}$
Steel.....	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
Pin Length.....	$3\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{2}$

All Punches packed  $\frac{1}{2}$  doz. per box

**CENTER PUNCHES No. 284**

Diameter of steel.....	$\frac{1}{4}$ in.	$\frac{3}{8}$ in.	$\frac{1}{2}$ in.	$\frac{5}{8}$ in.
Length.....	$3\frac{1}{2}$ in.	5 in.	6 in.	7 in.
Diameter of point.....	$\frac{1}{8}$ in.	$\frac{3}{16}$ in.	$\frac{5}{16}$ in.	$\frac{3}{8}$ in.

**PRICK PUNCHES No. 2873**

Diameter of steel.....	$\frac{1}{4}$ in.	$\frac{3}{8}$ in.	$\frac{1}{2}$ in.
Length.....	$3\frac{1}{2}$ in.	$5\frac{1}{2}$ in.	6 in.

**EXTRA LONG COLD CHISELS No. 205**

Width of Cutting edge	Length of Chisel				
$\frac{1}{2}$ in.....	10 in.	12 in.	.....	.....	.....
$\frac{5}{8}$ in.....	.....	12 in.	.....	.....	.....
$\frac{3}{4}$ in.....	.....	12 in.	18 in.	24 in.	.....
$\frac{7}{8}$ in.....	.....	12 in.	18 in.	24 in.	.....
1 in.....	.....	12 in.	18 in.	24 in.	.....
$1\frac{1}{4}$ in.....	.....	.....	18 in.	24 in.	36 in.
$1\frac{1}{2}$ in.....	.....	.....	.....	24 in.	36 in.

**STAR DRILLS No. 800**

$\frac{1}{4}$ in. x 12 in.	$\frac{1}{2}$ in. x 18 in.	$\frac{3}{4}$ in. x 24 in.
$\frac{5}{16}$ in. x 12 in.	$\frac{9}{16}$ in. x 18 in.	$\frac{7}{8}$ in. x 24 in.
$\frac{3}{8}$ in. x 12 in.	$\frac{5}{8}$ in. x 18 in.	1 in. x 24 in.
$\frac{7}{16}$ in. x 12 in.	$\frac{11}{16}$ in. x 18 in.	$1\frac{1}{4}$ in. x 24 in.
$\frac{1}{2}$ in. x 12 in.	$\frac{3}{4}$ in. x 18 in.	$1\frac{1}{2}$ in. x 24 in.
$\frac{9}{16}$ in. x 12 in.	$\frac{7}{8}$ in. x 18 in.	$1\frac{3}{4}$ in. x 24 in.
$\frac{5}{8}$ in. x 12 in.	1 in. x 18 in.	2 in. x 24 in.
$\frac{11}{16}$ in. x 12 in.	$1\frac{1}{8}$ in. x 18 in.	.....
$\frac{3}{4}$ in. x 12 in.	$1\frac{1}{4}$ in. x 18 in.	.....
$\frac{7}{8}$ in. x 12 in.	$1\frac{3}{8}$ in. x 18 in.	.....
1 in. x 12 in.	$1\frac{1}{2}$ in. x 18 in.	.....
$1\frac{1}{8}$ in. x 12 in.	$1\frac{3}{4}$ in. x 18 in.	.....
$1\frac{1}{4}$ in. x 12 in.	.....	.....

Hargrave No. 584 Bull Points and No. 580 Rivet Busters are made in all standard sizes.

*They must be* **TOUGH**  
*to stand this* **TEST**



**HARGRAVE**



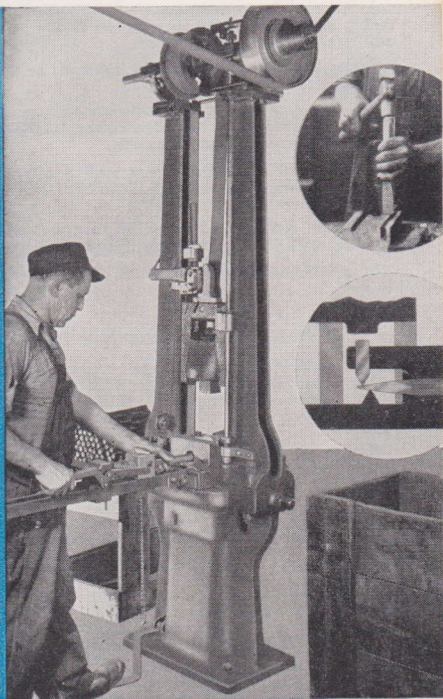
**ALLOY  
STEEL  
COLD  
CHISELS**



*Cut Faster*



*Last Longer*



The blades are tested in the Drop Testing Device to discover any flaws in the steel. Each one must cut a chip from heat-treated spring steel which is nearly as hard as the tool being tested, and the edge must stand it.

So—we know that you are getting practically 100% perfect tools from us.

But—you can still break them by repeated bending or wedging or cutting with one corner and a heavy hammer. And—chisels will not cut chilled iron or hardened steel. A Torch should be used for such work.

Hargrave PUNCHES and STAR DRILLS are also individually tested.

## V-FLAT STAR DRILLS FOR ELECTRIC AND PNEUMATIC HAMMERS

(Patented)

The HARGRAVE "V-Flat" STAR DRILL cuts faster and shows less wear because the construction of the "V-Flat" Point distributes the cutting action more uniformly over the surface being drilled than any other type of point.

It is much more easily sharpened with a file or a wheel than the four-point Star Drill.

Trip-Hammer Forged from special analysis steel and properly tempered. Individually TESTED for HARDNESS and TOUGHNESS before going into stock, insuring satisfactory service.

Furnished in the following sizes to fit HARGRAVE Chucks, also chucks for Black & Decker and Van Dorn, Syntron and Millers Falls Electric Hammers.

For other makes of hammers it is necessary to use them with the HARGRAVE Chucks—listed on opposite page.

In ordering, specify by number which taper is required on each size of drill.

### Specify Hargrave Taper Number in Ordering

Size Drill	Length				
$\frac{1}{4}$ in.	5 in.	8 in.	.....	.....	.....
$\frac{5}{16}$ in.	5 in.	8 in.	.....	.....	.....
$\frac{3}{8}$ in.	5 in.	8 in.	.....	.....	.....
$\frac{7}{16}$ in.	5 in.	8 in.	.....	.....	.....
$\frac{1}{2}$ in.	5 in.	8 in.	12 in.	.....	.....
$\frac{9}{16}$ in.	.....	8 in.	12 in.	18 in.	.....
$\frac{5}{8}$ in.	.....	8 in.	12 in.	18 in.	.....

Furnished with either No. 5 TAPER, which fits Black & Decker and Van Dorn Chucks, or No. 10 TAPER, which fits Syntron and Millers Falls Chucks.

$\frac{11}{16}$ in.	.....	8 in.	12 in.	18 in.	.....
$\frac{3}{4}$ in.	.....	8 in.	12 in.	18 in.	.....
$\frac{7}{8}$ in.	.....	8 in.	12 in.	18 in.	.....
1 in.	.....	8 in.	12 in.	18 in.	.....
$1\frac{1}{8}$ in.	.....	.....	12 in.	18 in.	.....

Furnished with either No. 6 TAPER, which fits Black & Decker and Van Dorn Chucks, or No. 11 TAPER, which fits Syntron and Millers Falls Chucks.

$1\frac{1}{4}$ in.	.....	.....	12 in.	18 in.	.....
$1\frac{3}{8}$ in.	.....	.....	12 in.	18 in.	24 in.
$1\frac{1}{2}$ in.	.....	.....	12 in.	18 in.	24 in.

Furnished with No. 12 TAPER, which fits Black & Decker and Van Dorn Chucks, also Syntron and Millers Falls Chucks.



(Patented) WE ALSO MAKE STAR DRILLS FOR HAND USE

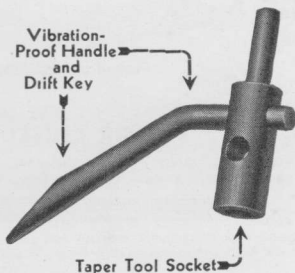
## HARGRAVE CHUCKS FOR 'ELECTRIC AND PNEUMATIC HAMMERS

No. 120

The use of HARGRAVE Chucks eliminates the necessity of carrying duplicate stocks of Hammer Tools for various hammers.

Made of alloy steel, heat treated; light but strong. No excess weight to absorb hammer blow.

This Chuck or Adapter can be furnished with shank to fit any standard make of Electric or Pneumatic Hammer and with taper tool socket to take HARGRAVE "V-Flat" STAR DRILLS. The vibration-proof handle affords ease of operation.



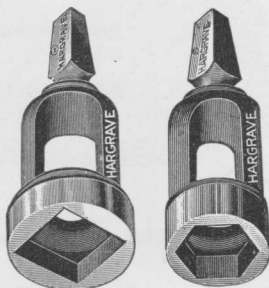
HARGRAVE CHUCK (Adapter) furnished with handle.

In ordering for Electric Hammers, specify MAKE and SIZE of hammer. Also give our number for TAPER which you wish the Tool Socket to take. (See listing of HARGRAVE Taper numbers on opposite page.)

## BRACE WRENCHES—Square and Hexagon

Made of Malleable Iron, Hardened

Square Stock No.	Hexagon Stock No.	Size Opening, Inches
151	165	$\frac{5}{16}$
152	166	$\frac{3}{8}$
153	167	$\frac{7}{16}$
154	168	$\frac{1}{2}$
155	169	$\frac{13}{16}$
156	170	$\frac{5}{8}$
1560	171	$\frac{11}{16}$
157	172	$\frac{25}{32}$
158	173	$\frac{7}{8}$
159	1731	1
160	1732	$1\frac{1}{8}$
161	1733	$1\frac{1}{4}$



**PLUGGING CHISELS No. 963**

Cutting Edge	Length	Diameter Steel	Weight, Doz.
$\frac{1}{4}$ in.	10 in.	$\frac{5}{8}$ in.	9 lbs. 5 oz.
Packed one-half dozen in a box			

**FLOOR CHISELS No. 950**

Size	Weight, Doz.
3 x $\frac{5}{8}$ x 12 in.	14 lbs
Packed one-half dozen in a box	

**ALL-STEEL WOOD CHISELS No. 577**

Cutting Edge	Diameter Steel	Length
$\frac{3}{4}$ in.	$\frac{5}{8}$ in.	12 in.
1 in.	$\frac{5}{8}$ in.	12 in.
$1\frac{1}{4}$ in.	$\frac{3}{4}$ in.	12 in.

Packed one-half dozen in a box

**WRECKING CHISELS**

Stock	Cutting Edge	Diameter Steel	Length
No. 582—Straight	$1\frac{1}{2}$ in.	$\frac{3}{4}$ in.	18 in.
No. 583—Bent	$1\frac{1}{2}$ in.	$\frac{3}{4}$ in.	18 in.

Packed one-quarter dozen in a box



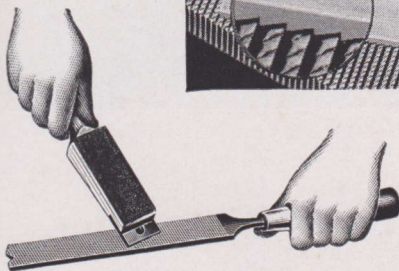
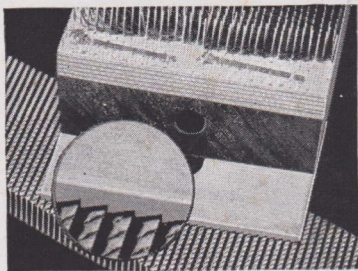
**H**  
**HARGRAVE**  
**FILE CLEANER**  
(WITH CHIP PLOW)



**No. 366**

The Chip Plow is pushed parallel to the file teeth, impressing the tooth pattern on the edge of the Plow. By continuing this operation over the part of the file that is clogged, all metal and other fouling is quickly and thoroughly removed.

When a file of different tooth spacing is to be cleaned another edge of the Plow is used. Plows last long but can be replaced at low cost. In the case of easily removed dirt the file card with its tempered steel wire teeth is used.



- No. 366—File Cleaner with Chip Plow.  
No. 364—File Cleaner without Chip Plow.  
No. 3641—File Cleaner with Scorer (No Chip Plow).



**HARGRAVE**

